

Listing of Claims:

The diagram shows a macrocyclic compound with a central metal atom M . The metal atom is coordinated by five ligands: L , E , G , J , and Q . The macrocycle is a ring of atoms connected by bonds, with substituents R^1 , R^2 , R^3 , and R^4 attached to it. The structure includes a carbonyl group ($C=O$) and an amide group ($-NH-$).

Formula 1

X and Y are independently selected from the moieties: alkyl, alkyl-aryl, heteroalkyl, heteroaryl, aryl-heteroaryl, alkyl-heteroaryl, cycloalkyl, alkyl ether, alkyl-aryl ether, aryl ether, alkyl amino, aryl amino, alkyl-aryl amino, alkyl sulfide, alkyl-aryl sulfide, aryl sulfide, alkyl sulfone, alkyl-aryl sulfone, aryl sulfone, alkyl-alkyl sulfoxide, alkyl-aryl sulfoxide, alkyl amide, alkyl-aryl amide, aryl amide, alkyl sulfonamide, alkyl-aryl sulfonamide, aryl sulfonamide, alkyl urea, alkyl-aryl urea, aryl urea, alkyl carbamate, alkyl-aryl carbamate, aryl carbamate, alkyl-hydrazide, alkyl-aryl hydrazide, alkyl hydroxamide, alkyl-aryl hydroxamide, alkyl sulfonyl, aryl sulfonyl, heteroalkyl sulfonyl, heteroaryl sulfonyl, alkyl carbonyl, aryl carbonyl, heteroalkyl carbonyl, heteroaryl carbonyl, alkoxy carbonyl, aryloxy carbonyl, heteroaryloxy carbonyl, alkylaminocarbonyl, arylaminocarbonyl, heteroarylaminocarbonyl or a combination thereof, with the proviso that X and Y may optionally be additionally substituted with moieties selected from the group consisting of aromatic, alkyl, alkyl-aryl, heteroalkyl, aryl-heteroaryl, alkyl-heteroaryl,

cycloalkyl, alkyl ether, alkyl-aryl ether, alkyl sulfide, alkyl-aryl sulfide, alkyl sulfone, alkyl-aryl sulfone, alkyl amide, alkyl-aryl amide, alkyl sulfonamide, alkyl amines, alkyl-aryl amines, alkyl-aryl sulfonamide, alkyl urea, alkyl-aryl urea, alkyl carbamate and alkyl-aryl carbamate;

$R^1 = COR^5$ or $B(OR)_2$, wherein $R^5 = H, OH, OR^8, NR^9R^{10}, CF_3, C_2F_5, C_3F_7, CF_2R^6, R^6$, or COR^7 wherein $R^7 = H, OH, OR^8, CHR^9R^{10}$, or NR^9R^{10} , wherein R^6, R^8, R^9 and R^{10} are independently selected from the group consisting of H, alkyl, aryl, heteroalkyl, heteroaryl, cycloalkyl, cycloalkyl, arylalkyl, heteroarylalkyl, $CH(R^1)COOR^{11}$, $CH(R^1)CONR^{12}R^{13}$, $CH(R^1)CONHCH(R^2)COOR^{11}$, $CH(R^1)CONHCH(R^2)CONR^{12}R^{13}$, $CH(R^1)CONHCH(R^2)R'$, $CH(R^1)CONHCH(R^2)CONHCH(R^3)COOR^{11}$, $CH(R^1)CONHCH(R^2)CONHCH(R^3)CONR^{12}R^{13}$, $CH(R^1)CONHCH(R^2)CONHCH(R^3)CONHCH(R^4)COOR^{11}$, $CH(R^1)CONHCH(R^2)CONHCH(R^3)CONHCH(R^4)CONR^{12}R^{13}$, $CH(R^1)CONHCH(R^2)CONHCH(R^3)CONHCH(R^4)CONHCH(R^5)COOR^{11}$, $CH(R^1)CONHCH(R^2)CONHCH(R^3)CONHCH(R^4)CONHCH(R^5)CONR^{12}R^{13}$, wherein $R^1, R^2, R^3, R^4, R^5, R^{11}, R^{12}, R^{13}$, and R' are independently selected from a group consisting of H, alkyl, aryl, heteroalkyl, heteroaryl, cycloalkyl, alkyl-aryl, alkyl-heteroaryl, aryl-alkyl and heteroarylalkyl;

Z is selected from O, N, or CH;

W may be present or absent, and if W is present, W is selected from C=O, C=S, or SO₂;

Q maybe present or absent, and when Q is present, Q is CH, N, P, (CH₂)_p, (CHR)_p, (CRR')_p, O, NR, S, or SO₂; and when Q is absent, M is also absent, and A is directly linked to X;

A is O, CH₂, (CHR)_p, (CHR-CHR')_p, (CRR')_p, NR, S, SO₂ or a bond;

E is CH, N or CR, or a double bond towards A, L or G;

G may be present or absent, and when G is present, G is (CH₂)_p,

(CHR)_p, or (CRR')_p; and when G is absent, J is present and E is directly connected to the carbon atom where G was connected to;

J maybe absent or present, and when J is present, J is $(CH_2)_p$, $(CHR)_p$, $(CRR')_p$, SO_2 , NH, NR or O; and when J is absent, G is present and E is directly linked to N;

L may be present or absent, and when L is present, L is CH, CR, O, S or NR; and when L is absent, then M may be absent or present, and if M is present with L being absent, then M is directly and independently linked to E, and J is directly and independently linked to E;

M may be present or absent, and when M is present, M is O, NR, S, SO_2 , $(CH_2)_p$, $(CHR)_p$, $(CHR-CHR')_p$, or $(CRR')_p$;

p is a number from 0 to 6; and

R , R' , R^2 , R^3 and R^4 are independently selected from the group consisting of H; C1-C10 alkyl; C2-C10 alkenyl; C3-C8 cycloalkyl; C3-C8 heterocycloalkyl, alkoxy, aryloxy, alkylthio, arylthio, amino, amido, ester, carboxylic acid, carbamate, urea, ketone, aldehyde, cyano, nitro; oxygen, nitrogen, sulfur, or phosphorus atoms with said oxygen, nitrogen, sulfur, or phosphorus atoms numbering zero to six; (cycloalkyl)alkyl and (heterocycloalkyl)alkyl, wherein said cycloalkyl is made of three to eight carbon atoms, and zero to six oxygen, nitrogen, sulfur, or phosphorus atoms, and said alkyl is of one to six carbon atoms; aryl; heteroaryl; alkyl-aryl; and alkyl-heteroaryl; with said alkyl, heteroalkyl, alkenyl, heteroalkenyl, aryl, heteroaryl, cycloalkyl and heterocycloalkyl moieties may be optionally substituted, with said term "substituted" referring to optional and suitable substitution with one or more moieties selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, aralkyl, cycloalkyl, heterocyclic, halogen, hydroxy, thio, alkoxy, aryloxy, alkylthio, arylthio, amino, amido, ester, carboxylic acid, carbamate, urea, ketone, aldehyde, cyano, nitro, sulfonamide, sulfoxide, sulfone, sulfonyl urea, hydrazide, and hydroxamate.

Claim 2 (previously amended): The compound of claim 1, wherein $R^1 = COR^5$, and R^5 is H, OH, $COOR^8$, or $CONR^9R^{10}$.

Claim 3 (previously amended): The compound of claim 2, wherein $R^1 = COCONR^9R^{10}$, and R^9 is H, R^{10} is H, $CH(R^1)COOR^{11}$, $CH(R^1)CONR^{12}R^{13}$,

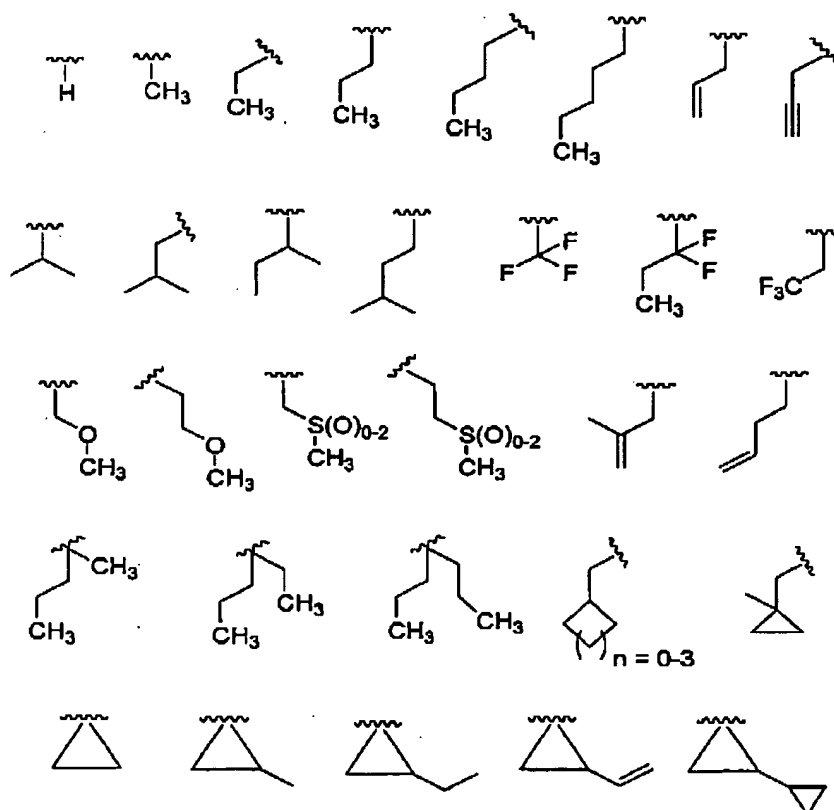
$\text{CH}(\text{R}^1)\text{CONHCH}(\text{R}^2)\text{COOR}^{11}$, $\text{CH}(\text{R}^1)\text{CONHCH}(\text{R}^2)\text{CONR}^{12}\text{R}^{13}$, or $\text{CH}(\text{R}^1)\text{CONHCH}(\text{R}^2)(\text{R}')$.

Claim 4 (previously amended): The compound of claim 3, wherein $\text{R}^{10} = \text{CH}(\text{R}^1)\text{CONHCH}(\text{R}^2)\text{COOR}^{11}$, $\text{CH}(\text{R}^1)\text{CONHCH}(\text{R}^2)\text{CONR}^{12}\text{R}^{13}$, or $\text{CH}(\text{R}^1)\text{CONHCH}(\text{R}^2)(\text{R}')$, wherein R^1 is H or alkyl, and R^2 is phenyl, substituted phenyl, hetero atom-substituted phenyl, thiophenyl, cyclohexyl, cyclopentyl, cyclopropyl, piperidyl, pyridyl and 2-indanyl.

Claim 5 (original): The compound of claim 4, wherein R^1 is H.

Claim 6 (previously amended): The compound of claim 5, wherein $\text{R}^2 =$ phenyl, thiophenyl, cyclohexyl, 2-indanyl, cyclopentyl, pyridyl, or phenyl(4-HNSO₂NH₂), R^{11} is H or *tert*-butyl, R^{12} and R^{13} are methyl, and R' is hydroxymethyl or *tert*-butoxymethyl.

Claim 7 (original): The compound of claim 1, wherein R^2 is selected from the group consisting of the following moieties:



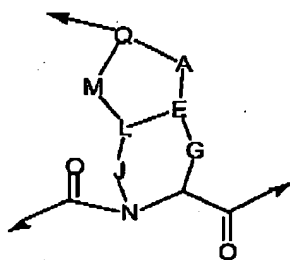
Claim 8 (previously amended): The compound of claim 7 wherein $\text{R}^1 = \text{COR}^5$, and R^6 is H, OH, COOR^8 , or $\text{CONR}^9\text{R}^{10}$.

Claim 9 (previously amended): The compound of claim 8 wherein L and M are absent, J is directly linked to E.

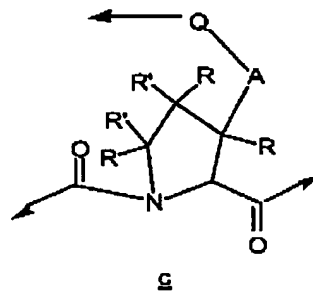
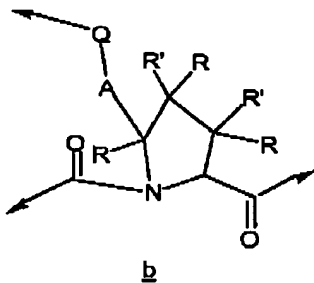
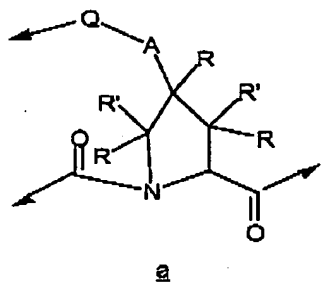
Claim 10 (previously amended): The compound of claim 8 wherein L, J and M are absent, E is directly linked to N.

Claim 11 (original): The compound of claim 8 wherein G and M are absent.

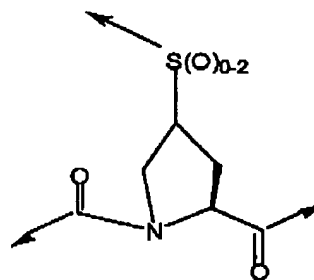
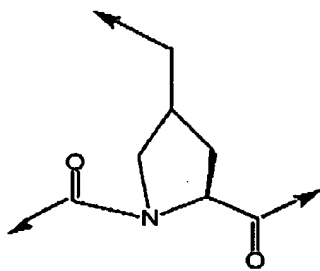
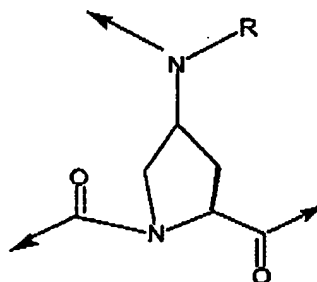
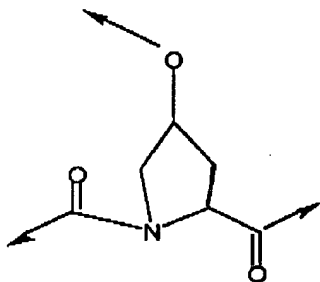
Claim 12 (previously amended): The compound of claim 8, wherein the moiety:



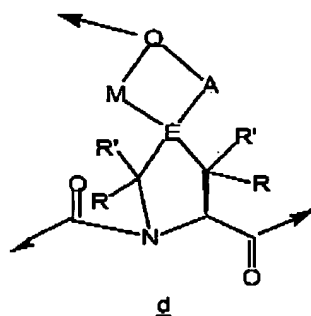
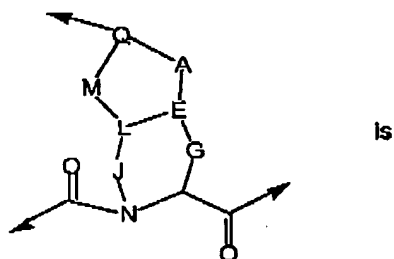
is selected from the group consisting of the following structures a, b, or c:



Claim 13 (original): The compound of claim 12, wherein structure a is selected from the following structures:

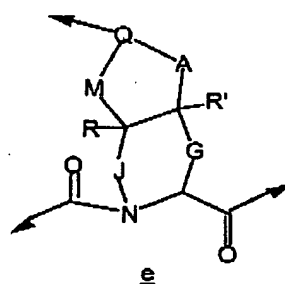
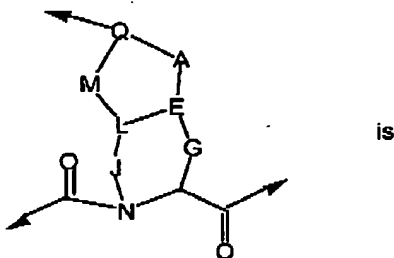


Claim 14 (original): The compound of claim 8, wherein:



wherein M may be absent or present, and if M is absent, Q is linked to E.

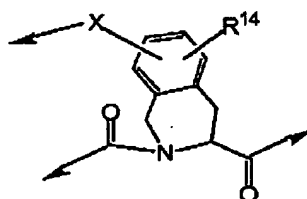
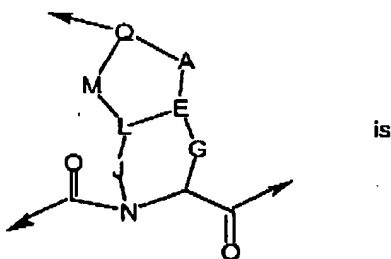
Claim 15 (original): The compound of claim 8, wherein:



wherein G and J are independently selected from the group consisting of $(CH_2)_p$, $(CHR)_p$, $(CHR-CHR')_p$, and $(CRR')_p$; A and M are independently selected from the group consisting of O, S, SO_2 , NR, $(CH_2)_p$, $(CHR)_p$, $(CHR-CHR')_p$, and $(CRR')_p$; and Q is CH, CR, or N.

Claim 16 (original): The compound of claim 8, wherein G and J are independently selected from the group consisting of $(CH_2)_p$, $(CHR)_p$, $(CHR-CHR')_p$, and $(CRR')_p$; and the moiety A-E-L-M-Q is an aromatic ring consisting of two to eight carbon atoms, zero to six hetero atoms with X and J being *ortho*, *para* or *meta* with respect to each other.

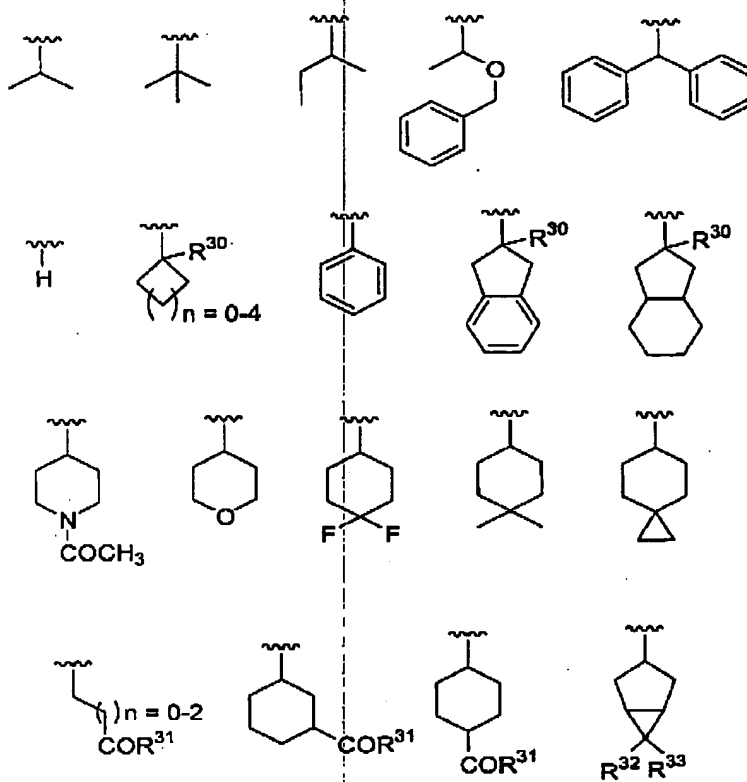
Claim 17 (original): The compound of claim 16, wherein:



f

wherein R¹⁴ is selected from the group consisting of H, alkyl, aryl, heteroalkyl, heteroaryl, cycloalkyl, alkyl-aryl, alkyl-heteroaryl, aryl-alkyl and heteroaralkyl.

Claim 18 (original): The compound of claim 1, wherein R³ is selected from the group consisting of:

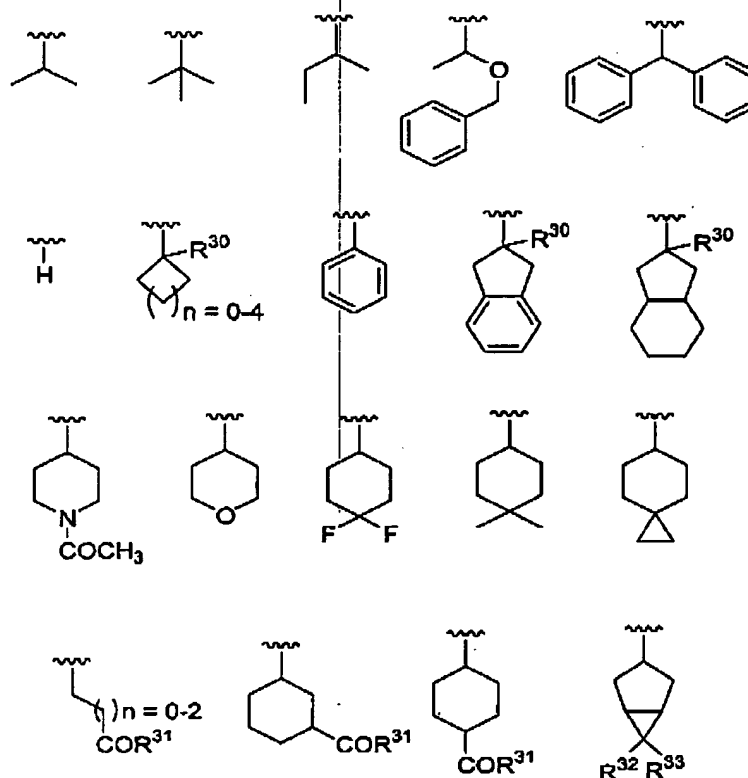


wherein R^{30} = H, CH_3 or other alkyl groups;

R^{31} = OH, O-alkyl, NH_2 , N-alkyl; and

R^{32} and R^{33} may be the same or different and are selected independently from H, F, Cl, Br and CH_3 .

Claim 19 (previously amended): The compound of claim 8, wherein R^3 is selected from the group consisting of:

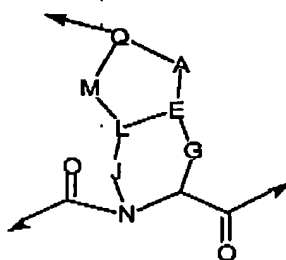


wherein R^{30} = H, CH_3 or other alkyl groups;

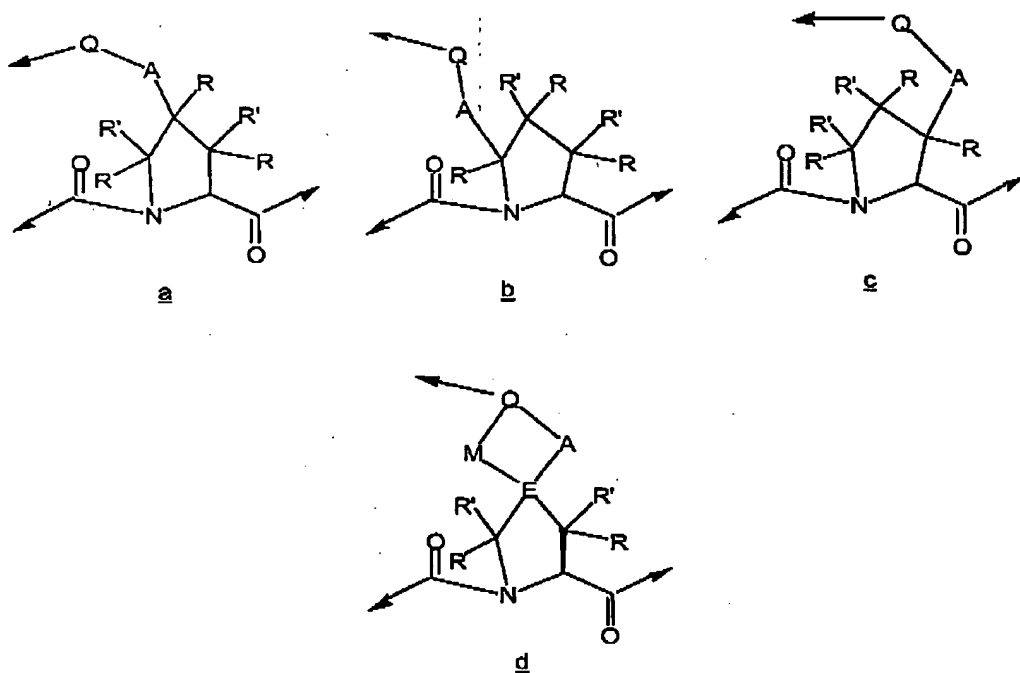
R^{31} = OH, O-alkyl, NH_2 , N-alkyl; and

R^{32} and R^{33} may be the same or different and are selected independently from H, F, Cl, Br and CH_3 ,

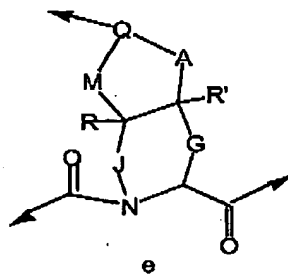
and the moiety:



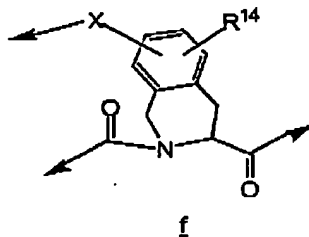
is selected from one of the following structures a, b, c, d, e, and f:



wherein M may be absent or present, and if M is absent, Q is linked to E;



wherein G and J are independently selected from the group consisting of $(CH_2)_p$, $(CHR)_p$, $(CHR-CHR')_p$, and $(CRR')_p$; A and M are independently selected from the group consisting of O, S, SO_2 , NR, $(CH_2)_p$, $(CHR)_p$, $(CHR-CHR')_p$, or $(CRR')_p$, Q is CH, CR, or N; and

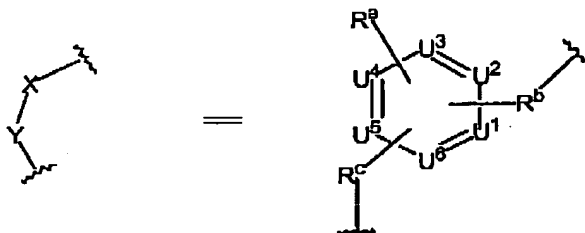


Claim 20 (original): A compound of claim 19, wherein Z = N and R⁴ = H.

Claim 21 (original): A compound of claim 20, wherein W is C=O.

Claim 22 (original): A compound of claim 21, wherein the moiety X-Y is selected from the group consisting of: C1-C6 alkyl, O-alkyl, NR-alkyl.

Claim 23 (original): A compound of claim 21, wherein:



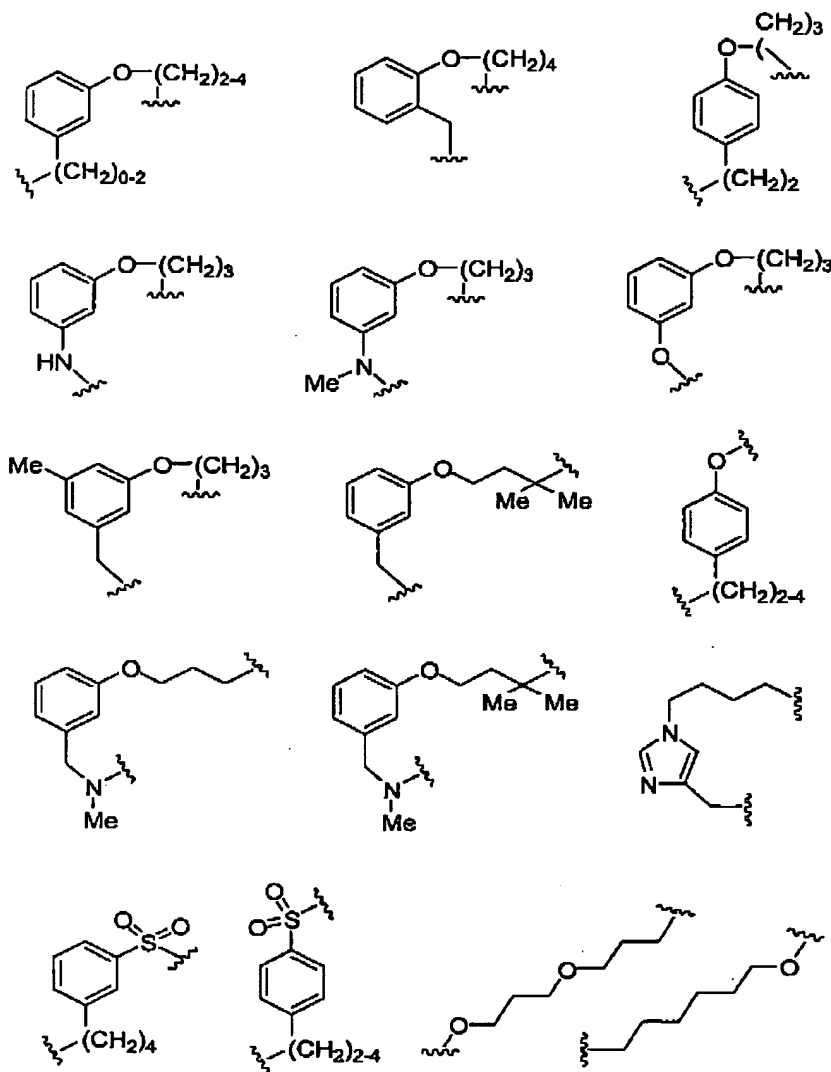
wherein R^b is connected directly to Q if Q is present or to A if Q is absent; R^c is connected to W; U^1 through U^6 can be part of a six membered carbon ring, or five or six membered ring with one or more heteroatoms;

R^a = H, alkyl, alkoxy, hydroxy, thio, halogen, nitro, cyano, carboxylic acid, ester, amide, amino, nitrile, or CF_3 ;

R^b is a bond, C1-C6 alkyl, C2-C6 alkenyl, C2-C6 alkynyl, O, S, SO_2 , NH, O(alkyl), S(alkyl), SO_2 (alkyl) or N(alkyl); and

R^c is a bond, C1-C6 alkyl, C2-C6 alkenyl, C2-C6 alkynyl, O, S, SO_2 , NH, O(alkyl), S(alkyl), SO_2 (alkyl), N(alkyl) or CH_2 -N(alkyl) with the CH_2 being linked to the aromatic ring.

Claim 24 (original): A compound of claim 21, wherein the moiety X-Y is selected from the group consisting of the following structures:



Claim 25 (original): A pharmaceutical composition comprising as an active ingredient a compound of claim 1.

Claim 26 (previously canceled).

Claim 27 (original): The pharmaceutical composition of claim 25 additionally comprising a pharmaceutically acceptable carrier.

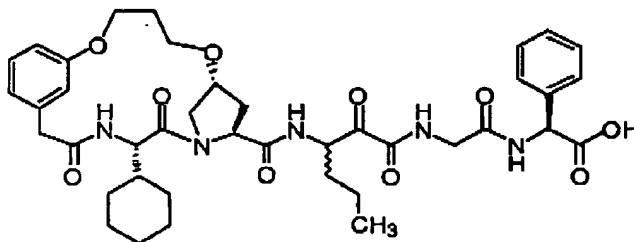
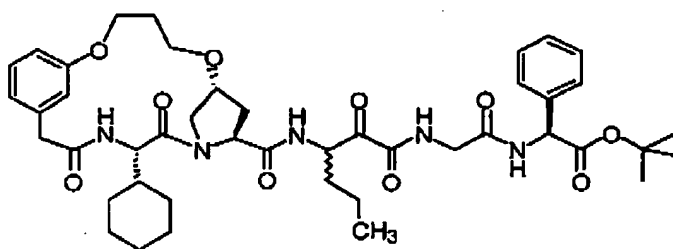
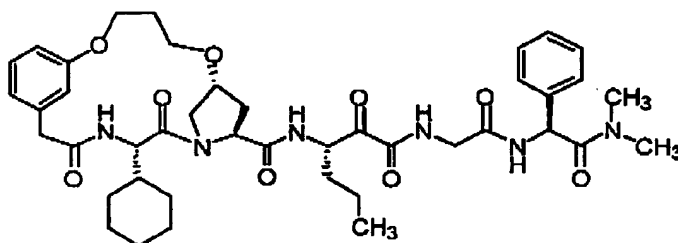
Claim 28 (currently amended): A method of treating disorders associated with the Hepatitis C Virus ("HCV") protease, said method comprising administering to a patient in need of such treatment a pharmaceutical

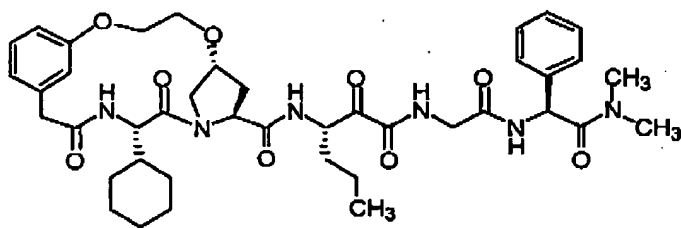
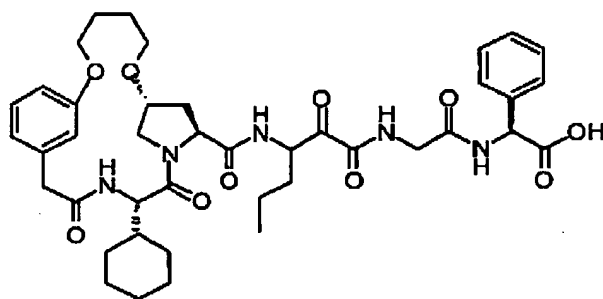
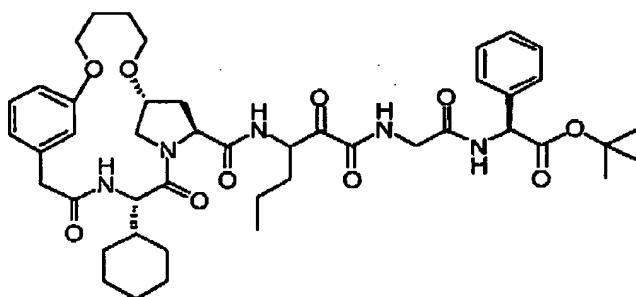
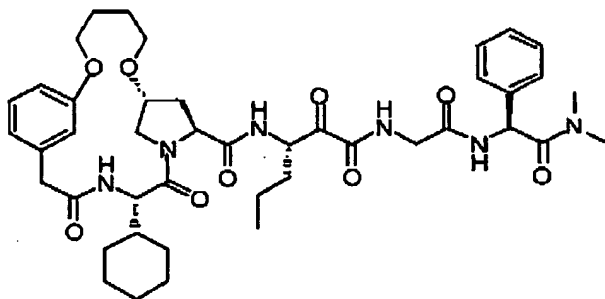
composition which comprises therapeutically effective amounts of a compound of claim 1.

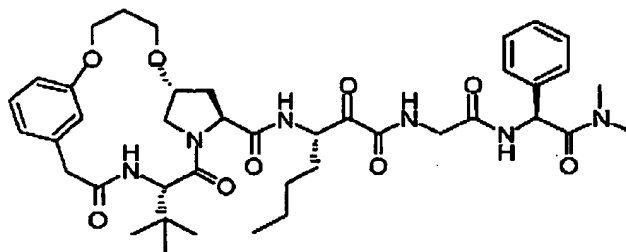
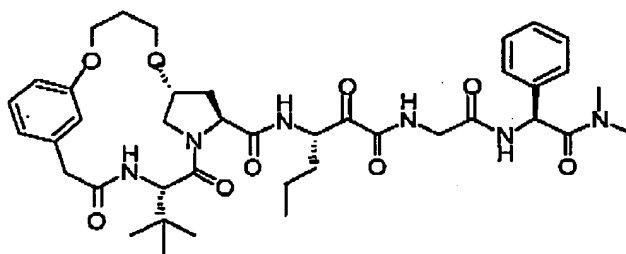
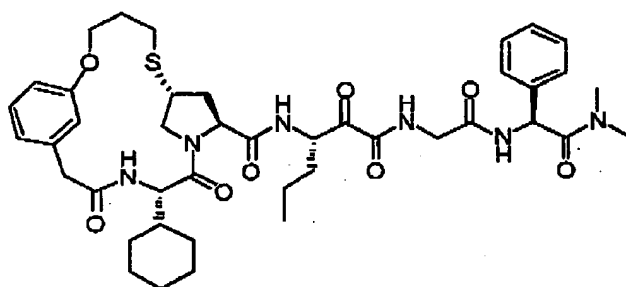
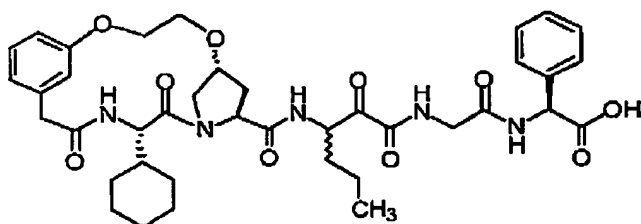
Claim 29 (previously canceled).

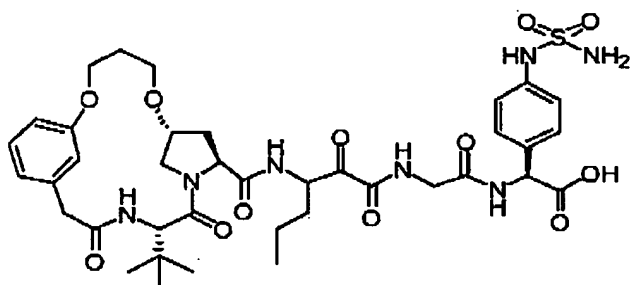
Claim 30 (currently amended): A method of preparing a pharmaceutical composition for treating the disorders associated with the Hepatitis C Virus ("HCV") protease, said method comprising bringing into intimate contact a compound of claim 1 and a pharmaceutically acceptable carrier.

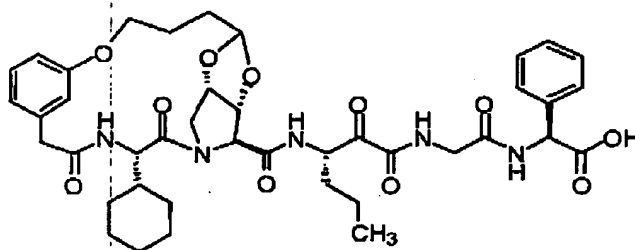
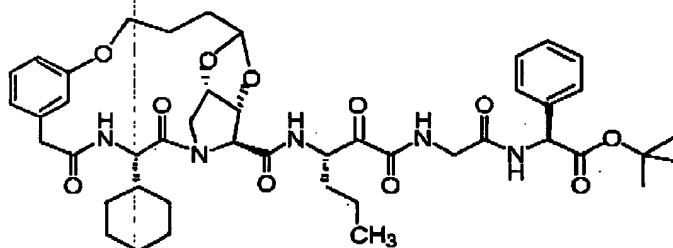
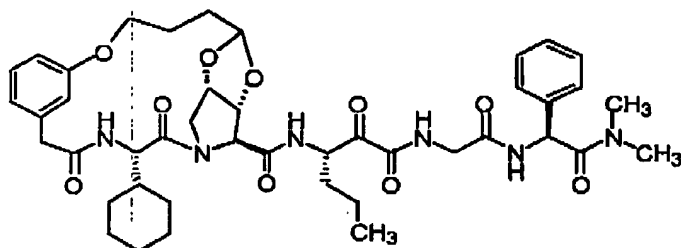
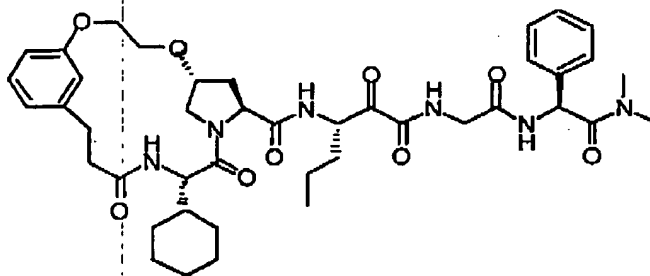
Claim 31 (currently amended): A compound exhibiting Hepatitis C Virus ("HCV") protease inhibitory activity, including enantiomers, stereoisomers and tautomers of said compound, and pharmaceutically acceptable salts or solvates of said compound, said compound being selected from the compounds of structures listed below:

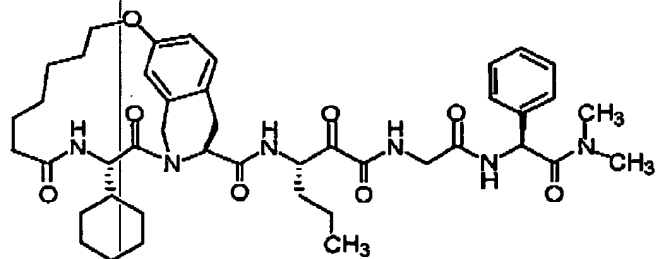
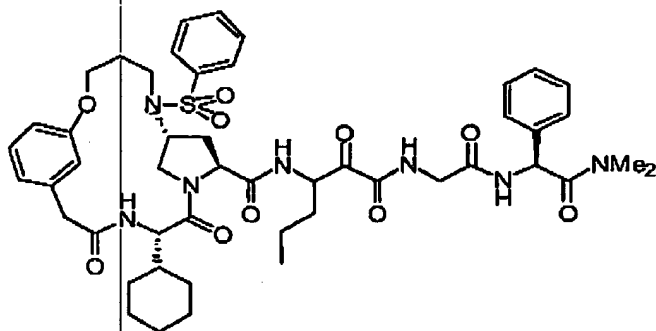
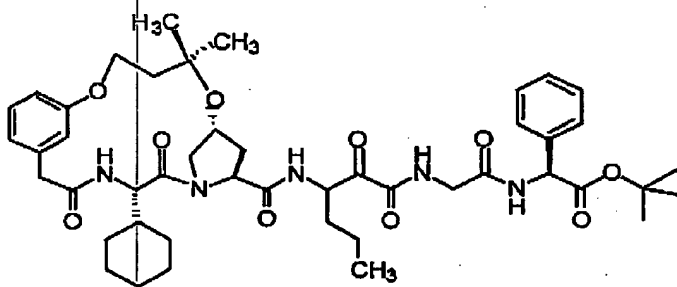
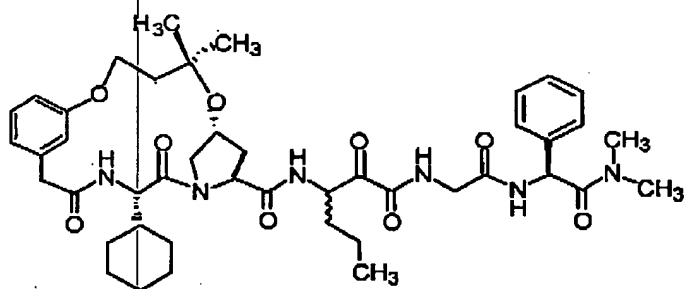


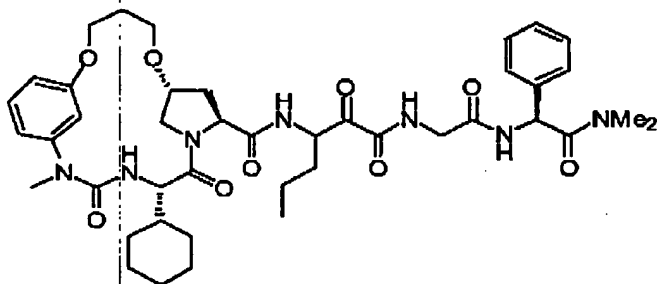
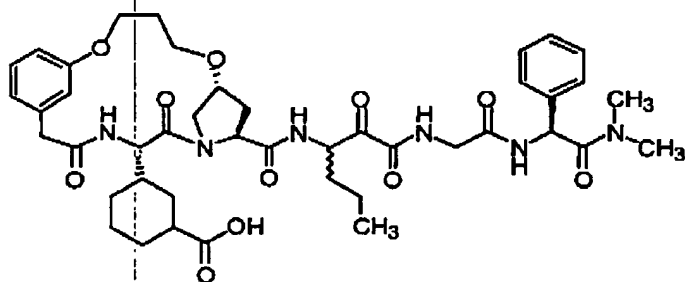
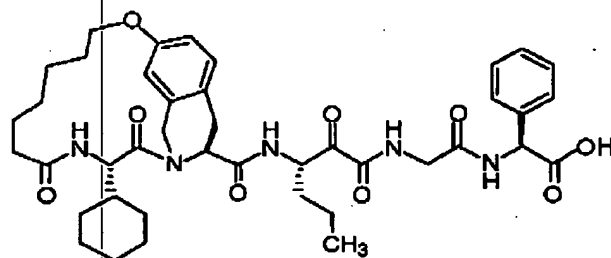
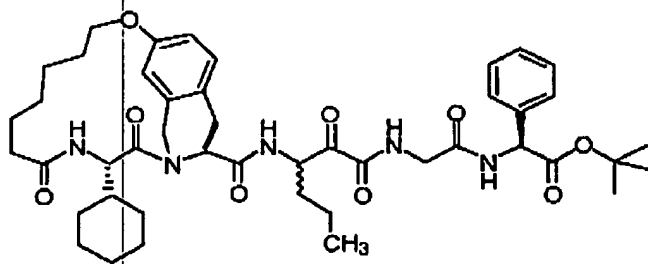


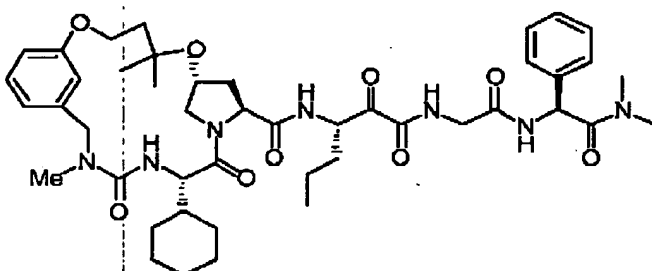
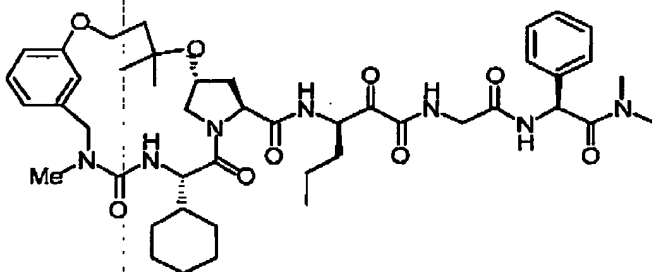
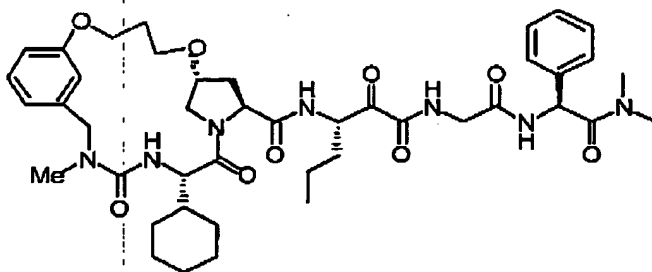
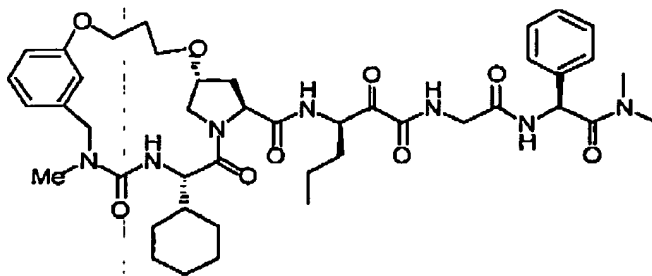


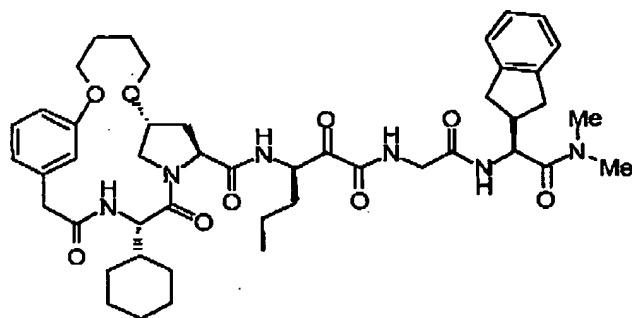
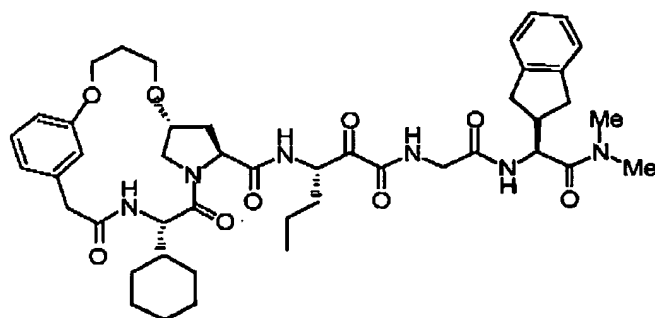
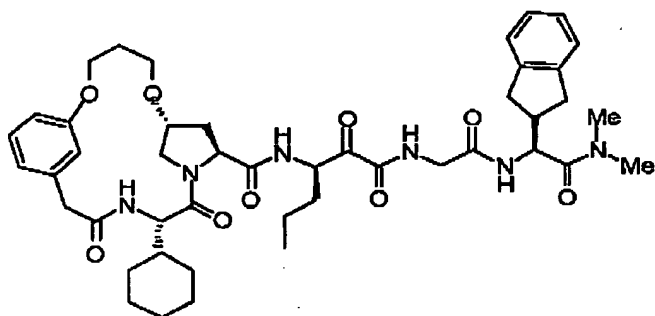
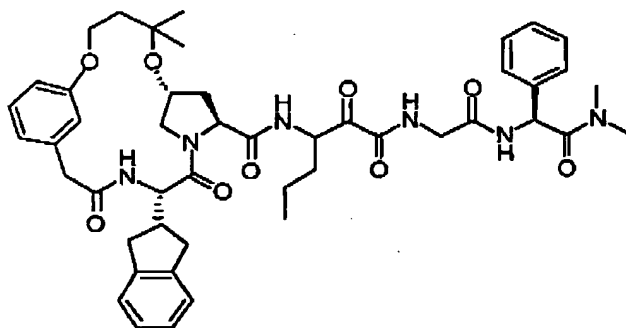


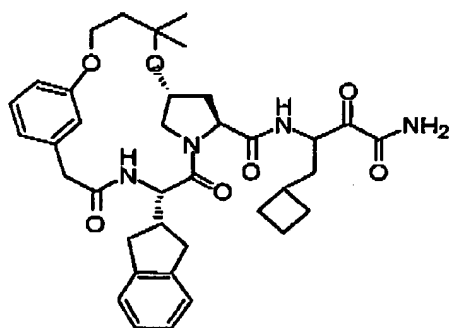
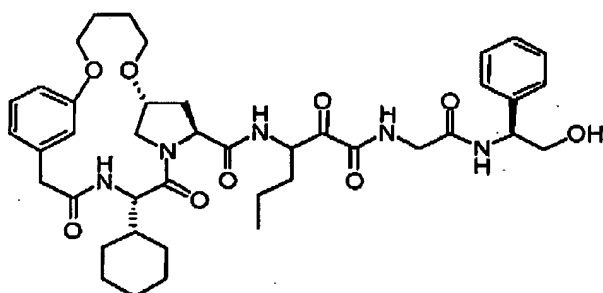
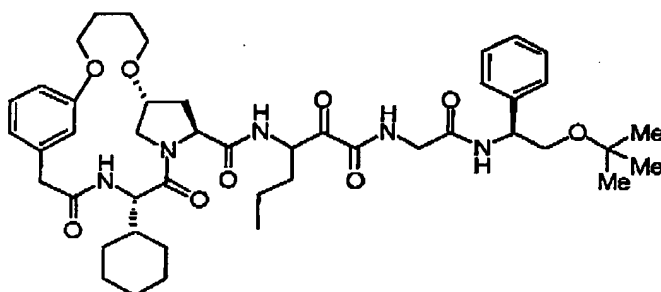
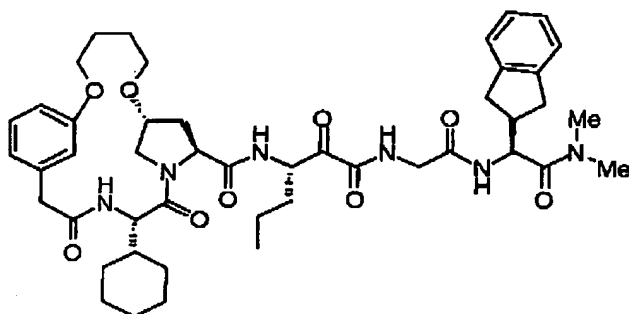


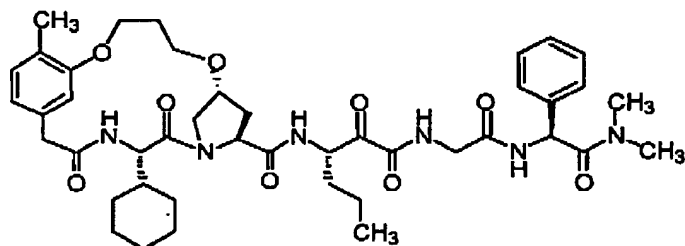
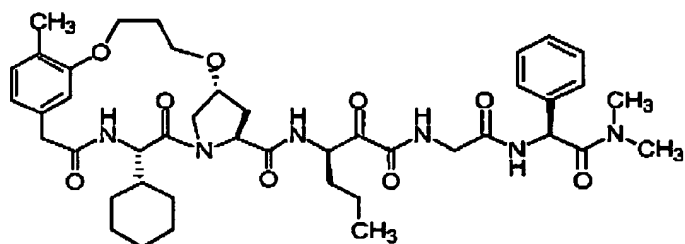
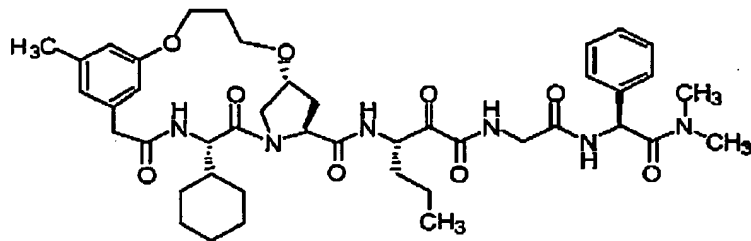
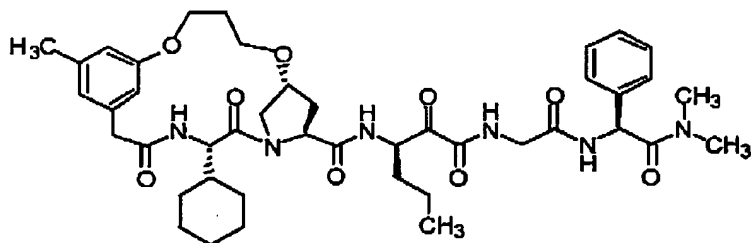


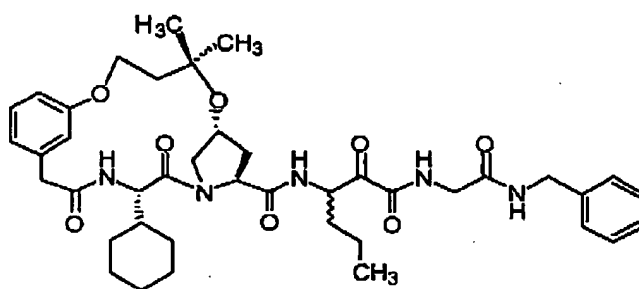
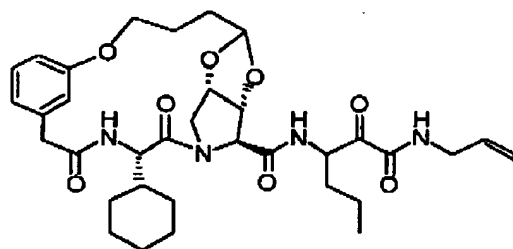
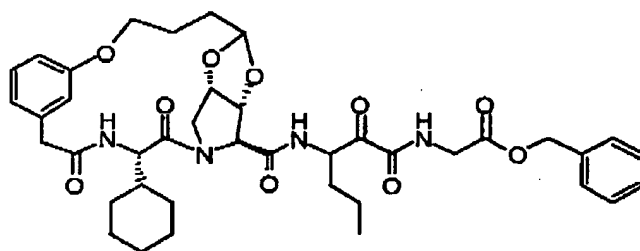
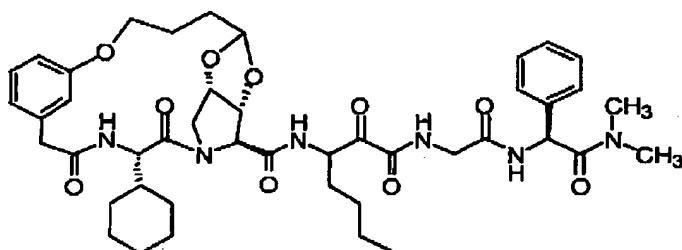


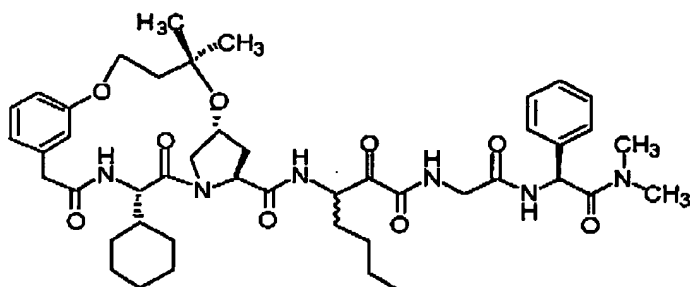
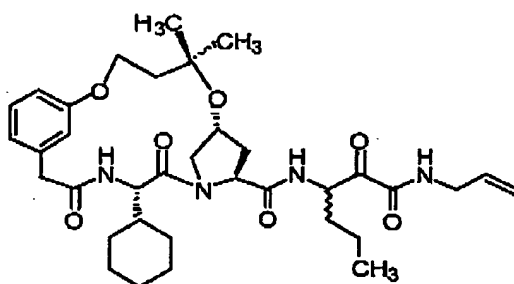
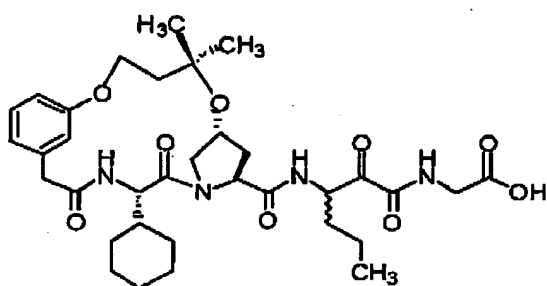
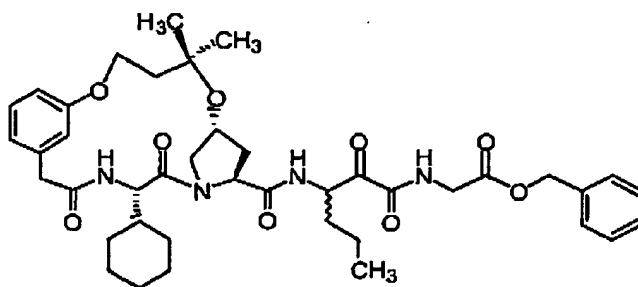


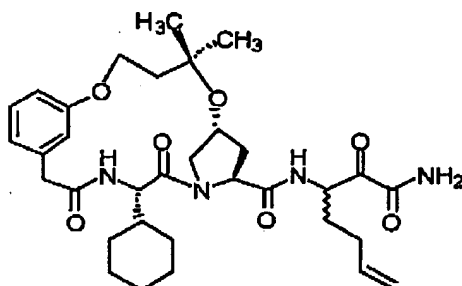
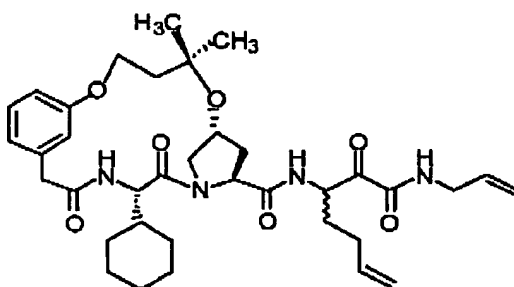
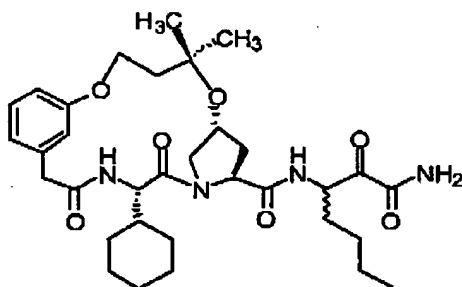
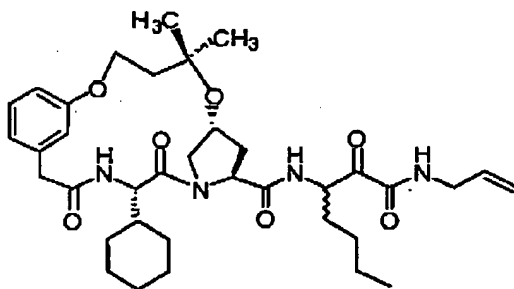


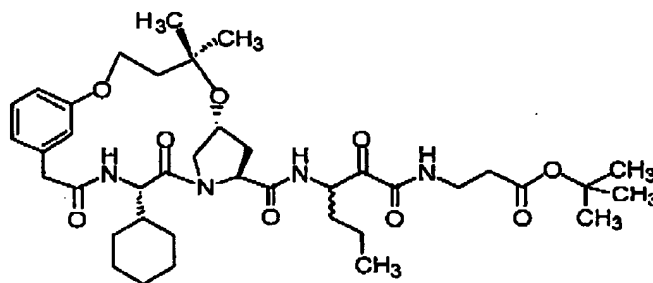
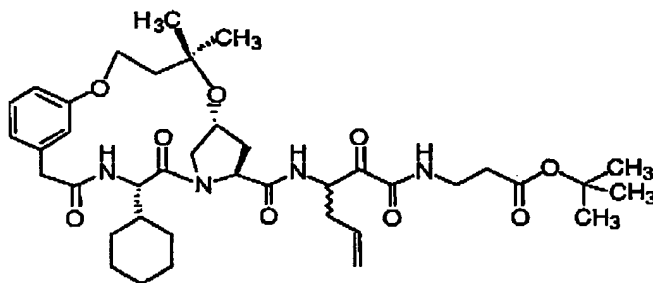
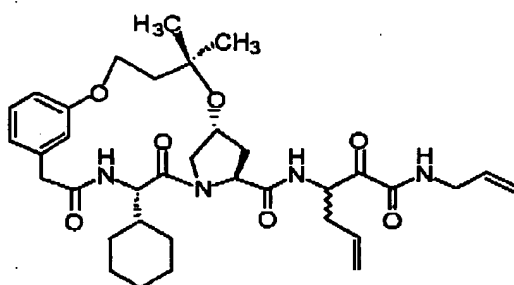
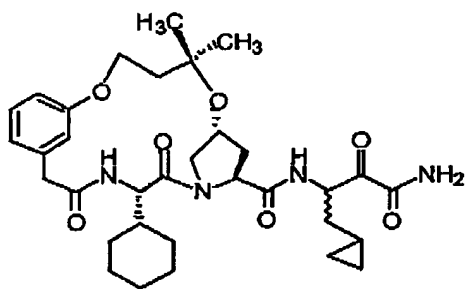


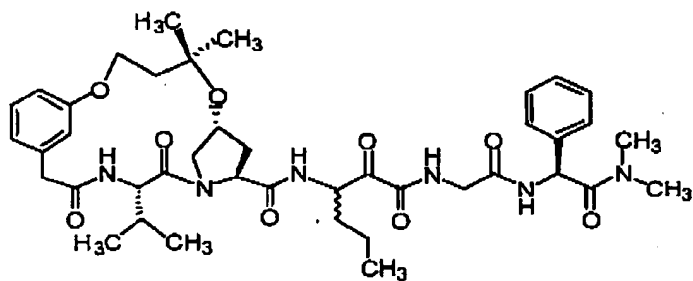
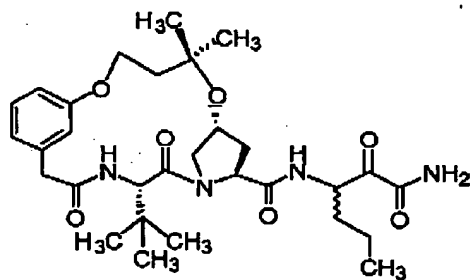
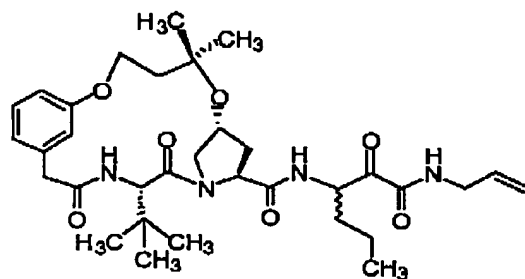
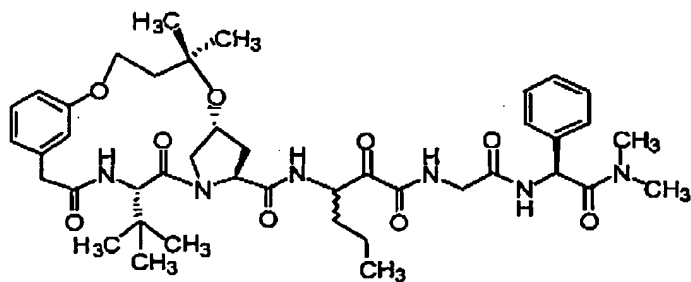


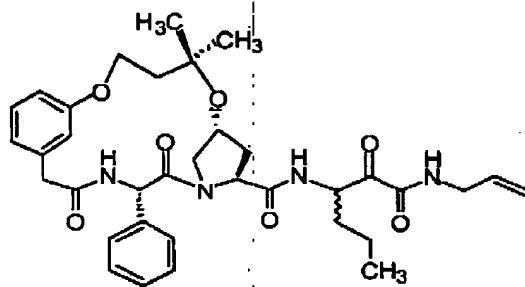
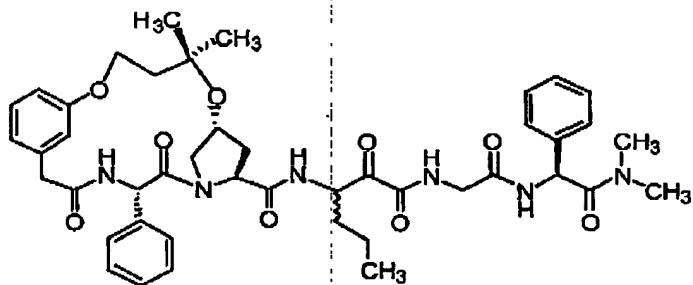
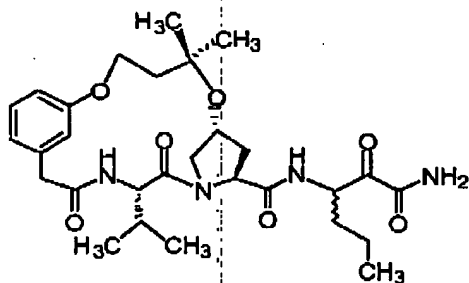
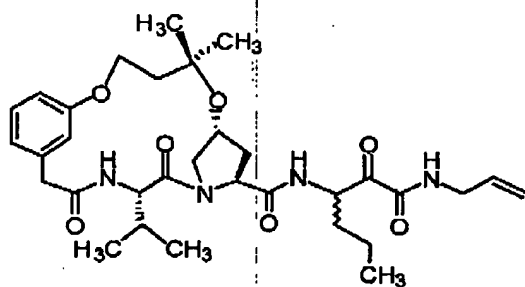


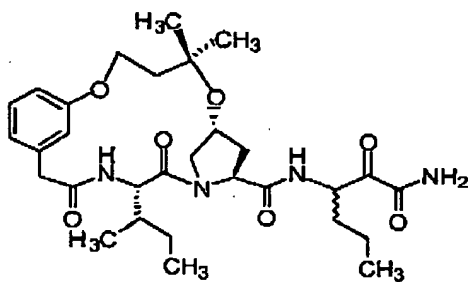
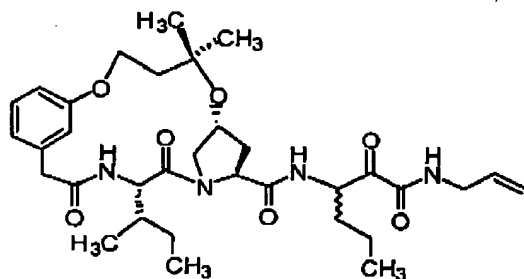
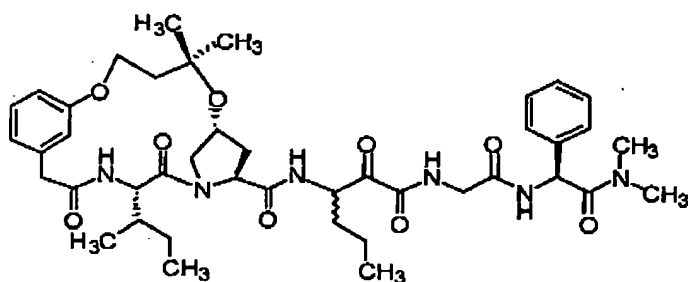
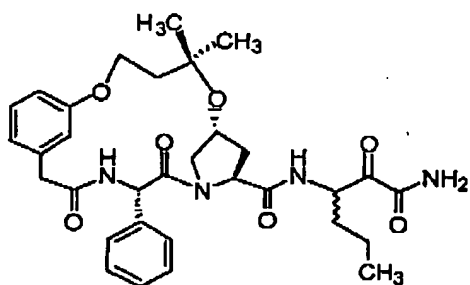


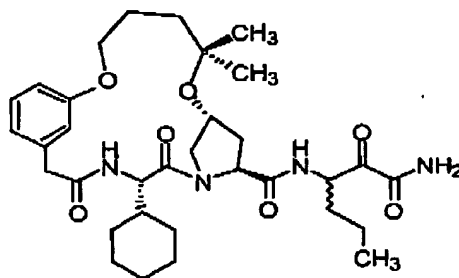
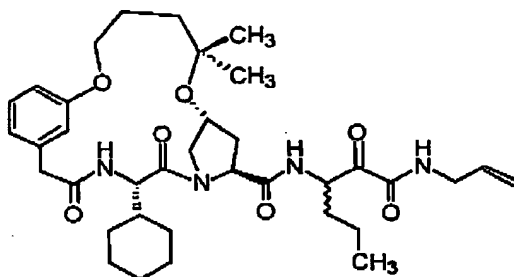
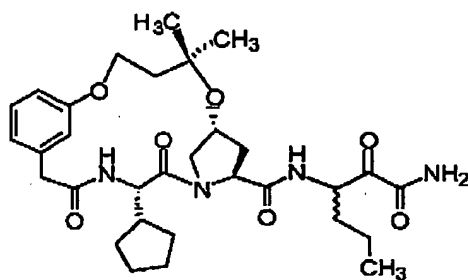
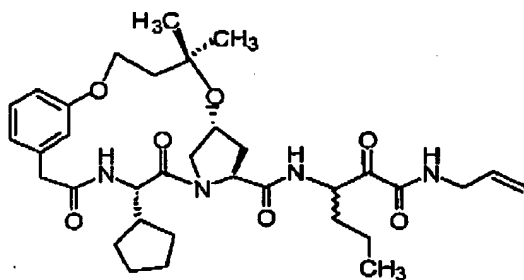


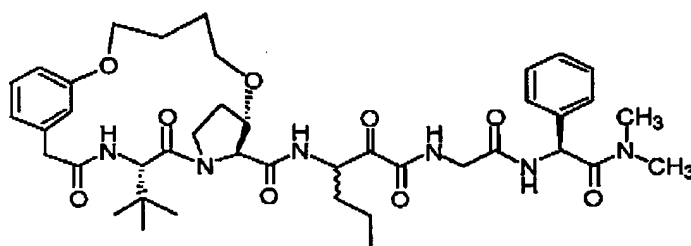
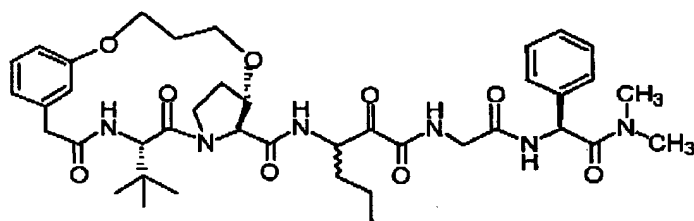
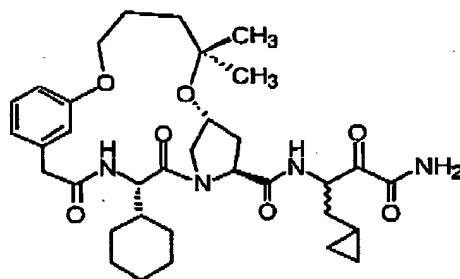
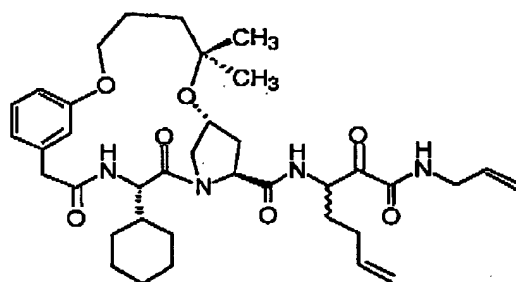












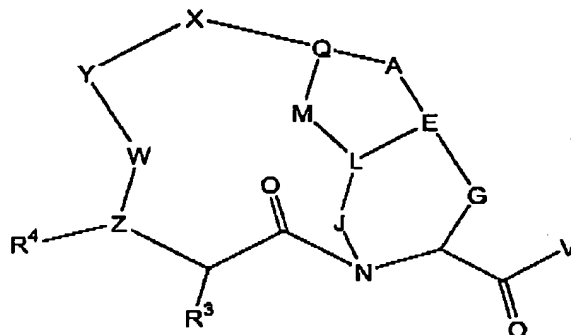
Claim 32 (currently amended): A pharmaceutical composition for treating disorders associated with the Hepatitis C Virus ("HCV") protease, said composition comprising therapeutically effective amount of one or more compounds in claim 31 and a pharmaceutically acceptable carrier.

Claim 33 (original): The pharmaceutical composition of claim 32, additionally containing an antiviral agent.

Claim 34 (previously amended): The pharmaceutical composition of claim 32 or claim 33, additionally containing an interferon.

Claim 35 (original): The pharmaceutical composition of claim 34, wherein said antiviral agent is ribavirin and said interferon is α -interferon.

Claim 36 (original): A compound of the formula:



wherein V = OR or NHR, with R being H or alkyl; and X, Y, Q, A, M, W, L, E, G, J, Z, R³ and R⁴ are as defined in Claim 1.